APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,967	03/06/2006	Shuhei Nishiyama	404777.114911	1985

29540   7590   09/17/2007
DAY PITNEY LLP
7 TIMES SQUARE
NEW YORK, NY 10036-7311

EXAMINER
HOTELLING, HAROLD A

ART UNIT	PAPER NUMBER
2164	

MAIL DATE	DELIVERY MODE
09/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/542,967	NISHIYAMA, SHUHEI
	Examiner	**Art Unit**	
	Harold A. Hotelling	2164	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>21 July 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1 - 14</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1 - 14</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>21 July 2005</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

This communication is in response to the application filed on July 21, 2005. The

application has been examined. Claims 1 – 14, of which claim 1 is in independent form,

are pending in this Office Action.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d),

claiming foreign priority to Japan Patent Office application number 2003-12545 (filed on

January 21, 2003), which papers have been placed of record in the file.

Objections

Abstract

The applicant is reminded of the proper language and format for an abstract of

the disclosure.

The abstract should avoid using phrases which can be implied, such as, "The

disclosure concerns," "The disclosure defined by this invention," "The disclosure

describes," or "Disclosed is . . ." See MPEP 608.01(b).

Claims

Claims 1 and 2 are objected to because of the following informality:

Page 2, line 8 and line 23 recite "said computer . . ." There is insufficient

antecedent basis for this limitation in the claim. The only previous mention of a

computer is "a plurality of computers" on page 1, line 10.

Appropriate correction is required.

Status of Claims

Claims1 – 14 are rejected under 35 U.S.C. 102(b).

35 U.S.C. §102 rejection

The following is a quotation of the appropriate paragraph of 35 U.S.C. 102 that

forms the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 14 (U.S. filing date: July 21, 2005) are rejected under 35 U.S.C.

102(b) as anticipated by Draper et al. (U.S. Patent number 5,924,096) (issued on July

13, 1999) (hereafter "Draper"). Draper incorporates by reference:

- U.S. Patent number 6,192,365 (hereafter "Draper365")

- U.S. Patent number 5,991,771 (hereafter "Draper771")

With respect to independent claim 1, Draper teaches **[a] distributed database

system** (column 6, lines 15 – 16: "FIG. 5 illustrates several methods of the present

invention for managing a distributed database of objects, . . .") **comprising:**

**a <u>database administration apparatus</u>, which administers a database

allocated on network** (column 3, lines 1 – 4: "The index can be used to efficiently

create a list of recent events, which can then be sent to a master node to obtain the

information needed to update a local cache of database objects or records.");

a **topology administration server** for distributing database of said database

administration apparatus (column 11, lines 26 – 29: "the synchronization topology is a

star with one master location such as the master system 602 acting as a

synchronization hub for many replica locations such as the locations 608, 610."), **and**

a **plurality of computers** (column 8, lines 11 – 12: "The system 600 also

includes two client caches 608, 610, which reside on clients 110."), **which are**

allocated in an administration domain administered on network by said topology

administration server (column 8, lines 3 – 5: "The system 600 includes a master

system 602");

wherein said topology administration server comprises:

storage for topology information, which stores topology information,

including certain information correlating a database object identifier, which is

information for identifying a database object administered by said database

administration apparatus, with an identifier of a database administration

apparatus for identifying a database administration apparatus administering the

database object (column 1, line 56 – 59: "One synchronization method sends a list of

cached database object identifiers and corresponding timestamps or sequence

numbers from the caching node to a master node which holds a master replica.");

a receiver for a cache request, which receives a cache request including

said database object identifier transmitted from at least one or more of said

computers for caching a database object identified by said database object

identifiers (this cache request is necessary for effecting the division of tasks between

caches described in column 3, lines 13 – 16: "one cache may add a data item to the

cache each time an add event occurs, while another cache only changes the cache

when a modify event occurs.");

an acquisition unit for an identifier of a database administration apparatus,

which acquires a corresponding identifier of a database administration apparatus

from said storage for topology information based on the database object

identifier included in the cache request received by said receiver for a cache

request (acquiring this identifier is necessary for coordinating the two masters

described in column 8, lines 3 – 5: "The system 600 includes a master system 602

denoted 'A' and a second master system 604 denoted 'B'.");

a transferring unit for a cache request, which transfers said cache request

to the database administration apparatus identified by the identifier of the

database administration apparatus, in which said identifier is acquired by said

acquisition unit for an identifier of a database administration apparatus (this

transfer is necessary to effect the division of tasks between caches described in column

3, lines 13 – 16: "one cache may add a data item to the cache each time an add event

occurs, while another cache only changes the cache when a modify event occurs.");

said computer comprises:

a transmitter for a cache request, which transfers a cache request (this

transfer is necessary to effect the division of tasks between caches described in column

3, lines 13 – 16: "one cache may add a data item to the cache each time an add event

occurs, while another cache only changes the cache when a modify event occurs."),

a receiver for a database object, which receives the database object

returned in accordance with the transmission of the cache request by said

transmitter for a cache request (necessary to effect the division of tasks between

caches described in column 3, lines 13 – 16: "one cache may add a data item to the

cache each time an add event occurs, while another cache only changes the cache

when a modify event occurs."); **and**

a caching unit for a database object, which <u>caches</u> a <u>database object</u>

received by the receiver for a database object (column 3,lines 1 – 4: "The index can

be used to efficiently create a list of recent events, which can then be sent to a master

node to obtain the information needed to update a local <u>cache</u> of <u>database objects</u> or

records."); **and**

said database administration apparatus comprises:

a receiver for a cache request, which receives the <u>cache request</u>

transferred by the <u>topology administration server</u> (column 8, lines 46 – 50: "a <u>cache</u>

site 608 or 610 can send a <u>request</u> to the <u>master system 602</u> or 604 to get a list of the

most recent events that occurred on data items 202 since the last time the cache made

an inquiry. The cache's request can specify the event types that should be returned."),

and

a copy and transmission unit for a database object, which <u>copies and</u>

<u>transmits</u> the <u>database object</u> in accordance with the cache request received by

the receiver for a cache request (column 8, lines 50 – 54: "This allows, for example,

one cache to <u>add</u> <u>data items 202</u> to the cache each time an add event occurs while

another cache may only update data items 202 in the cache when a modify event

occurs.").

    With respect to dependent claim 2, Draper teaches **[t]he distributed database**

system according to Claim 1,

    wherein said computer comprises a program receiver, which receives a

program for performing computation while referring to a database object cached

in the caching unit for a database object (a program for performing computation is

necessary for effecting the division of tasks between caches described in column 3,

lines 13 – 16: "one cache may add a data item to the cache each time an add event

occurs, while another cache only changes the cache when a modify event occurs.").

    With respect to dependent claim 3, Draper teaches **[t]he distributed database**

system according to Claim 1 or 2, wherein said computer comprises a detection

unit for computational load, which <u>detects</u> the <u>computational load</u> thereof; and a

transmitter for a cache request, which <u>transmits a cache request</u> based on the

computational load detected by the detection unit for computational load (column

11, lines 51 – 53: "The <u>synchronizing</u> step 528 may include a <u>clash</u> <u>detecting</u> step 530

to detect inconsistencies in the replicas that cannot be resolved simply by updating a

data item's value.").

With respect to dependent claim 4, Draper teaches **[t]he distributed database system according to Claim 1 or 2, wherein the transmitter for a cache request transmits a <u>cache request</u> upon <u>starting</u> a computer** (Draper365, column 14, lines 38 – 40: "<u>merging location sets</u> normally occurs when a computer new to the network <u>starts</u> up and merges into an existing location set.").

With respect to dependent claim 5, Draper teaches **[t]he distributed database system according to Claim 1 or 2, wherein the cache request includes information relating to <u>capacities</u> and data types of database objects cacheable by the caching unit for a database object** (Draper365, column 35, lines 45 – 48:"Update objects are separated from one another to aid analysis during the update identifying step 100 and to reduce the effect of possible object size <u>limitations</u>.").

With respect to dependent claim 6, Draper teaches **[t]he distributed database system according to Claim 1 or 2, wherein the cache request includes information relating to time slots during which the caching unit for a database object can cache a database object** (column 9, last line – column 10, line 2: "the system 600 allows synchronization intervals as frequent as every five seconds").

With respect to dependent claim 7, Draper teaches **[t]he distributed database system according to Claim 1 or 2, wherein the cache request includes information relating to computational capacity of a computer** (column 8, lines 55 – 60: "The

request from the cache 608, 610 to the master system 602, 604 can also specify the

maximum number of events to return. Limiting the number of events is important

because the cache may use a synchronization thread that allows its cache manager to

process only a few events during each pass, thereby allowing CPU use by other

processes.").

With respect to dependent claim 8, Draper teaches **[t]he distributed database**

system according to Claim 1 or 2, wherein the cache request includes information

relating to consideration for caching a database object by a computer (column 8,

lines 55 – 60: "The request from the cache 608, 610 to the master system 602, 604 can

also specify the maximum number of events to return. Limiting the number of events is

important because the cache may use a synchronization thread that allows its cache

manager to process only a few events during each pass, thereby allowing CPU use by

other processes.").

With respect to dependent claim 9, Draper teaches **[t]he distributed database**

system according to Claim 1,

wherein the topology information further correlates an identifier for a

computer, in which a database object is cached, with a database object identifier

(necessary for effecting the division of tasks between caches described in column 3,

lines 13 – 16: "one cache may add a data item to the cache each time an add event

occurs, while another cache only changes the cache when a modify event occurs.");

and

said topology administration server comprises:

a receiver for cache-completed information, which receives cache-completed information, which is information indicating caching of the database object to the computer (necessary for effecting the division of tasks between caches described in column 3, lines 13 – 16: "one cache may add a data item to the cache each time an add event occurs, while another cache only changes the cache when a modify event occurs."),

a cache updating unit for topology information, which <u>updates</u> the <u>cache-completed information</u> of topology information stored in the storage for topology information to the current status based on the cache-completed information received by the receiver for cache-completed information (column 1, lines 56 – 59: "One <u>synchronization</u> method sends a list of cached database object identifiers and corresponding <u>timestamps or sequence numbers</u> from the caching node to a master node which holds a master replica.").

With respect to dependent claim 10, Draper teaches **[t]he distributed database system according to Claim 9,**

wherein said topology information correlates lock information relating to a <u>lock</u>, which is operated by a database object, with a <u>database object identifier</u> (Draper365, column 22, lines 35 – 36: "The NdrOdLock() function explicitly adds an exclusive or shared <u>lock</u> to an object using the object's <u>DOID</u>."); **and**

said topology administration server comprises:

a receiver for lock-operation information, which receives the lock

information, a lock updating unit for topology information, which updates lock

information of topology information, which is stored in the storage for topology

information, to the current status based on the lock information received by the

receiver for lock-operation information (Draper771, column 5, lines 41 – 44: "To

prevent inconsistencies, access to each replica is by way of a target database object

lock that serializes updates to the replica, and the updates are applied atomically.").

With respect to dependent claim 11, Draper teaches [t]he distributed database

system according to Claim 9 or 10, having a plurality of said topology

administration servers, wherein said topology administration server comprises:

an exchanging unit for topology information, which exchanges topology

information with the other topology administration server administrating the

other administration domain communicable via network (necessary for coordinating

the two masters described in column 8, lines 3 – 5: "The system 600 includes a master

system 602 denoted 'A' and a second master system 604 denoted 'B'.").

With respect to dependent claim 12, Draper teaches [t]he distributed database

system according to Claim 2 or 9, wherein said database administration

apparatus comprises:

a transmitter for an update-operation instruction, which transmits an

update-operation instruction, which is an instruction for update-operation of a database object, to a client apparatus of a computer caching the database object upon executing the update-operation with respect to the database object held therein (column 3, lines 1 – 4: "The index can be used to efficiently create a list of recent events, which can then be sent to a master node to obtain the information needed to update a local cache of database objects or records."); **and**

said computer comprises: a receiver for an update-operation instruction, which receives an update-operation instruction, and an update-operation unit for a database object, which updates the database object cached in the caching unit for a database object based on the update-operation instruction received by the receiver for an update-operation instruction (column 3, lines 13 – 16: "one cache may add a data item to the cache each time an add event occurs, while another cache only changes the cache when a modify event occurs.").

With respect to dependent claim 13, Draper teaches **[t]he distributed database system according to Claim 2 or 9, wherein said database administration apparatus comprises:**

a receiver for update-operation information, which receives update-operation information relating to the update-operation on a database object, an update-operation unit, which executes the update-operation on the database object held therein based on the update-operation information received by the receiver for update-operation information, and a transmitter for an update-

operation instruction, which transmits an update-operation instruction of a

cached database object to a client apparatus of a computer caching the database

object based on said update-operation information (column 3, lines 1 – 4: "The

index can be used to efficiently create a list of recent events, which can then be sent to

a master node to obtain the information needed to update a local cache of database

objects or records."); and

said computer comprises:

a transmitter for update-operation information, which transmits update-

operation information, a receiver for an update-operation instruction, which

transmits an update-operation instruction, and an update-operation unit for a

database object, which updates the database object cached by the caching unit

for a database object based on the update-operation instruction received by the

receiver for an update-operation instruction (column 3, lines 13 – 16: "one cache

may add a data item to the cache each time an add event occurs, while another cache

only changes the cache when a modify event occurs.").

With respect to dependent claim 14, Draper teaches [t]he distributed database

system according to Claim 1, which further comprises:

a journal administration server comprising:

a receiver for a journal, which receives a journal indicating an update on a

database object administered by said database administration apparatus, storage

for a journal, which stores a journal received by the receiver for a journal (column

5, lines 20 – 24: "Each data item 202 has an associated tag 204 (in alternative

embodiments, only selected data items are tagged). Each tag 204 value corresponds to

an event in the history of the associated data item 202, such as the most recent update

to the data item 202."),

a replay unit for a journal, which replays the journal stored by the storage

for a journal, a storing unit for a snapshot, which stores a snapshot generated

based on the journal replayed by said replay unit for a journal, and a recovery

unit having a function for executing processes for recovery of a domain in failure

from said snapshot upon suffering a domain failure (column 5, lines 24 – 25: "The

tags 204 may be designed to allow recovery of earlier versions of the data item 202.");

and

said database administration apparatus comprises:

a transmitter for a journal, which transmits the journal (column 3, lines 1 – 4:

"The index can be used to efficiently create a list of recent events, which can then be

sent to a master node to obtain the information needed to update a local cache of

database objects or records.") (column 5, lines 20 – 24: "Each data item 202 has an

associated tag 204 (in alternative embodiments, only selected data items are tagged).

Each tag 204 value corresponds to an event in the history of the associated data item

202, such as the most recent update to the data item 202.").

Contact Information

The prior art made of record, listed on form PTO-892, and not relied upon, if any,
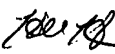
is considered pertinent to the applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harold A. Hotelling whose telephone number is (571) 270-1293. The examiner can normally be reached between 7:00 a.m. - 5:30 p.m. Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones, can be reached at (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is (571) 270-2293.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Harold A. Hotelling
Examiner
Art Unit 2164

HAH
September 5, 2007

CHARLES RONES
SUPERVISORY PATENT EXAMINER